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967.82 330
D 489r

TANGANYIKA Territory.

Annual Report

on

Development Commission

1952

1953
PRINTED BY THE GOVERNMENT PRINTER
DAR ES SALAAM
Price Shs. 2/50

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967.82:330
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TANGANYIKA

Report on Development, 1952

INTRODUCTION

1. This report will carry forward the review of Tanganyika's economic progress which was begun in the 1951 Annual Report of the Development Organization. It will therefore disregard the fortuitous distinction between schemes which are a part of the territorial Development Plan and those which lie outside it, and also the distinction between activities which are financed under the Development Budget and those which are provided for from other sources. But in the two appendices will be given detailed accounts of the progress of the Plan and of expenditure under the Development Budget.

2. This review covers a period of sharp change in economic conditions. Shortages of staff, of plant, and of materials, which had held back progress in previous years, were largely overcome in 1952. But, at the moment at which the deployment of effort reached its peak, pressures of international finance, trade and marketing, working upon Tanganyika's economy, began to canalize development activities. In the middle of the year it was accepted that the financial resources available to Government during the final four years of the current Development Plan, 1953 to 1956, might be smaller than earlier estimates had suggested, and it was necessary to curtail the commitments to be carried forward into that period. The achievements of 1952 were, therefore, not the inception of grandiose new schemes but the consolidation of work already begun.

3. The arrangement of this report will follow closely that of the 1951 Report of the Development Organization. In order to preserve continuity of expression some of the background information which that Report contained will be repeated here. But essentially this is the next chapter of the story.

4. As some of the figures to be included are no more than estimates, statistical information should be treated with a degree of caution. Wherever possible, comparative tables will be provided, rather than individual figures, since the object is to illustrate general trends, not to supply absolute data.

I.—GENERAL FACTORS IN ECONOMIC DEVELOPMENT

Communications

The Government of Tanganyika, which is responsible for roads and aerodromes, and the East Africa High Commission, which controls railways and harbours, posts and telecommunications, and air control and air radio services, plan to spend £30 million on Tanganyika's communications in the period 1950-1956. By the end of 1952 actual expenditure exceeded £12 million.

(a) *Roads*

The aim of the programme of road construction and improvement is to provide a system of all-weather roads throughout the territory. Eventually this will involve linking the road system of the Lake and Western Provinces with that of the remainder of the country, improving the existing main highway from Kenya through Arusha, Dodoma and Mbeya to the south and the tenuous link between Dodoma and Morogoro, constructing two new roads from the southern border to the northern, in the far west and near the coast in the east, and providing high class roads between the ports of Tanga, Dar es Salaam and Mtwara and the export producing areas in the interior which they serve. This master plan will take a number of years and a great deal of money to complete. Each year the aim is to construct or improve such sections of trunk roads as are most urgently required in the light of economic development. A system of main feeder roads has also been planned which will receive attention in accordance with the development of areas which they serve. The plan is not of course rigid or inflexible since unforeseen development may warrant a number of changes.

Since the new roads which have so far been constructed replace, for most of their length, existing roads of lower grade there has been no significant increase in the total mileage of the territory's roads (about 18,000 miles maintained by the Central Government and 8,000 miles of Native Authority tracks). But, as the first stretch of bituminized road outside township areas came into use in 1952, and as the Public Works Department carried out a widespread programme of betterment and maintenance that was both more closely supervised than had been possible in the past and facilitated by an increasing quantity of mechanical equipment, the average standard of the main roads of the territory has risen noticeably.

Development funds were again provided in 1952 for the clearing of tracks to open up rural areas, especially areas of new settlement, as for example in the southern part of Pare District and in alienated areas of the Southern Province. The justification of this expenditure will be the produce that will come along these roads in future years to the railhead, the mill and the grain store.

Of the two roads being constructed by Messrs. Stirling Astaldi, under the supervision of the Consulting Engineers, Sir Alexander Gibb & Partners, that from Namanga through Arusha and Moshi to Himo (120 miles) was virtually complete at the end of 1952. On the Dar es Salaam/Morogoro Road work continued but owing to the rapidity with which the cost of materials and plant rose, and to unforeseen increases in the work due to difficult soil conditions, the specifications for much of the road have perforce been reduced. It will be in use early in 1954 and will have 27 miles of bituminous surface. Work by the Société Dumez on the Tanga/Korogwe road continued at a very satisfactory speed throughout the year. This road too will be completed early in 1954. Road construction units of the Public Works Department

were at work throughout 1952 on the Lindi/Nanganga and the Morogoro/Iringa roads. On the latter excellent progress was made. Extensive road surveys were carried out in the Lake and Southern Provinces.

The road services of the East African Railways and Harbours Administration now operate over 1,583 route miles. Most of the new, heavy vehicles ordered for these services have now been delivered. Tanganyika Roadways, in which the Colonial Development Corporation has a large interest, increased their road transport earnings in 1952 by 50% above those for 1951.

In Dar es Salaam the Motor Transport Company again recorded an increase in mileage and passengers carried.

The figures are:—

	1950	1951	1952
Number of Buses	17	20	24
Mileage	500,000	682,626	807,587
Passengers Carried	3,065,500	4,927,787	7,081,705

For the rest, road transport is in the hands of a very large number of operators, many of whom run only one or two vehicles and operate with very low overhead costs. The introduction of road transport licensing is still under consideration by Government.

NUMBER OF MOTOR VEHICLES OPERATING ON TANGANYIKA HIGHWAYS

	Lorries and Buses	Other Vehicles	Total
1938	1,731	3,444	5,175
1948	5,648	5,697	11,345
1950	6,371	8,923	15,294
1951	6,199	10,888	17,087
1952	6,996	11,844	18,840

(b) *Railways*

Since the amalgamation of the Railways with those of Kenya and Uganda in 1948, £9,500,000 has been spent on capital works in Tanganyika, while a further £8,000,000 is to be spent under the existing loan progamme during the next few years. These funds are being devoted to the work of increasing the capacity of the Central and the Tanga lines, opening up branch lines where traffic potentialities justify them, constructing an entirely new railway in the Southern Province and investigating the possibility of a link between the Tanga Line and the Central Line and another to the south and through to Rhodesia.

During 1952 the Southern Province Railway was operating over 80 miles of track between Mkwaya and Nachingwea under construction conditions only: the extension from Ruo to Mtwara will come into use in 1953.

The Central Line worked at high pressure throughout the year and goods traffic of 617,000 tons broke all previous records; the number of passenger journeys declined slightly to 1,217,000. To increase working capacity bridges were strengthened, longer crossing loops were laid and a traffic control

circuit was installed on the busiest section—that between Dar es Salaam and Dodoma. Six new Mikado steam locomotives came into use. The workshops in Dar es Salaam were extended and re-equipped.

On the Tanga Line traffic was of the same order as in the previous two years, in spite of the cumulative effect of the deficiencies which have existed on this system for many years past, by which the Railway Administration is severely handicapped.

Reports on the survey of a rail link with Rhodesia were published during the year. The estimated cost is £33 million at present prices, but the economic appreciation of the route leaves it an open question whether rail or road communication should be given priority. The survey of the proposed Morogoro/Korogwe line was completed but the report has not yet been published.

Approval was given for the Railways and Harbours Administration to raise a further loan of £32¼ million in the next five years: approximately one third of this will be used on capital works in Tanganyika, including harbour development.

CENTRAL LINE, RAILWAY ROAD SERVICES AND LAKE TANGANYIKA STEAMSHIP SERVICES

	Number of Passenger Journeys	Weight of Goods Carried		Ton-mileage of Traffic	
		Tons	Index (1948 = 100)	Ton-mileage	Index (1948 = 100)
1948 ...	1,294,000	382,000	100	128,500,000	100
1949 ...	1,438,000	435,000	114	146,000,000	114
1950 ...	1,237,000	602,000	157	177,000,000	138
1951 ...	1,335,000	586,000	153	186,500,000	145
1952 ...	1,217,000	617,000	162	220,500,000	172

TANGA LINE

	Number of Passenger Journeys	Weight of Goods Carried		
		Tons	Index (1948 = 100)	
1948 ...	905,000	160,000	100	
1949 ...	1,046,000	170,000	106	
1950 ...	1,023,000	193,000	120	
1951 ...	981,000	195,000	122	1951 and 1952 figures are estimated only.
1952 ...	1,078,000	194,000	121	

(c) *Harbours*

Planned expenditure on harbour works between 1948 and 1956 is £7 million. This provides for two deep water berths in Dar es Salaam, with which is being built a third for Belgian Congo traffic, two deep-water berths under construction at Mtwara and a new lighter quay at Tanga, on which work began at the end of the year. Extensive dredging is being carried ont at Dar es Salaam.

More than three-quarter million tons of goods passed through the port of Dar es Salaam in 1952, an increase of twenty per cent compared with 1951. At Tanga too there was an appreciable increase. In the Southern Province traffic is still being handled at Lindi and Mikindani.

On Lake Tanganyika the S.S. *Liemba* returned to service in December after a major refit. She has been equipped with new oil-fired boilers and bilge keels to improve her speed and stability. The Lake Victoria services were maintained by the Rusinga and Usoga, supplemented by tug and lighter and launch services.

Harbours	Weight of Goods Handled in Tons					
	Dar es Salaam		Tanga		Southern Province Ports	
	Imports	Exports	Imports	Exports	Imports	Exports
1948	333,000	171,000	70,000	136,000	89,000	45,000
1949	395,000	192,000	81,000	142,000	116,000	41,000
1950	396,000	169,000	106,000	141,000	84,000	37,000
1951	425,000	218,000	97,000	138,000	56,000	54,000
1952	501,000	261,000	107,000	160,000	52,000	73,000

NET REGISTERED TONNAGE OF STEAMSHIPS ENTERING TANGANYIKA PORTS

1938	3,070,545
1948	2,287,368
1949	3,160,982
1950	3,424,218
1951	3,491,692
1952	3,629,307

(d) *Aerodromes and Air Transport*

Tanganyika now has forty-seven aerodromes and landing strips. The existing aerodrome at Dar es Salaam, which in 1952 had more scheduled service movements than any other aerodrome in East Africa, is being replaced by a new one of international C. standard which will be capable of use by Comet jet-propelled aeroplanes. Terminal buildings and runway extensions have been constructed or begun in 1952 at many of the smaller aerodromes in pursuance of Government's policy of providing all centres of considerable population with airfields of international F. standard.

There are eleven air radio stations in the territory.

East African Airways Corporation provides regular and frequent services to all the more important towns within the territory and to the neighbouring countries of Kenya, Uganda and Zanzibar. A weekly service between Dar es Salaam and London by Hermes aircraft of British Overseas Airways Corporation was started during 1952. Central African Airways provide direct communication between Dar es Salaam, Nyasaland and Southern Rhodesia, while Sabena operate a route to the Belgian Congo. Caspar Air Charters also operate a regular service round Lake Victoria.

MAJOR AERODROMES SUMMARY OF AIRCRAFT MOVEMENTS AND PASSENGERS

	Aircraft Movements	Passengers Handled
1938	... 6,862	... 6,461
1948	... 19,644	... 54,009
1950	... 20,298	... 111,565
1951	... 20,548	... 117,952
1952	... 20,000 (estimate)	... 118,300 (estimate)

(e) *Posts and Telecommunications*

In order to provide up-to-date postal, telephone and telegraph services in a land of great distances and scattered population there has been a steady increase since the war in the activities of the East African Posts and Telecommunications Administration. There are now 150 post offices and agencies, of which forty-one provide a full range of postal services. Four travelling post offices operate on the railway routes.

There is no house-to-house delivery but private boxes and bags and a poste restante service are available. 640 new boxes were installed during 1952, bringing the total to 5,920. The volume of letter and parcel mail continued to increase. Additional direct airmail services to the United Kingdom and the Belgian Congo were introduced.

Telephone exchanges now number fifty-six, of which five are automatic. Several exchanges were enlarged during 1952. The number of subscribers is now 7,138. While the number of local calls fell considerably in 1952, the number of trunk calls increased by 16% to 465,000. Radio telephone services are now available to most Commonwealth and European countries and to North and Central America. Internal radio telephone links operating on very high frequencies will soon be in use between Dar es Salaam and Tanga, Mombasa, Nairobi, Moshi and Dodoma.

Telegrams are accepted in 182 centres. Teleprinter, or high speed wireless telegraphy, equipment is in use on the busier circuits. A ship to shore telegraph service is worked by the Posts and Telecommunications Administration but foreign cables are all passed by Cable and Wireless Ltd.

POSTAL AND TELECOMMUNICATIONS STATISTICS

	Letters Handled	Parcels Handled	Telegrams Handled	Telephone Calls
1938	7,066,000 ...	99,400 ...	443,900 ...	2,031,000
1948	14,580,000 ...	191,800 ...	696,600 ...	5,128,000
1950	16,730,000 ...	192,800 ...	721,800 ...	7,139,000
1951	17,816,000 ...	216,100 ...	829,900 ...	8,329,000
1952	23,420,000 ...	237,900 ...	850,800 ...	6,373,000

The Dar es Salaam broadcasting station extended its programme during 1952 and additional transmitting equipment is now on order. Regular reception is already possible as far away as Iringa and Tabora. Programmes —mainly for African listeners—are reaching a wide public. The station is under the control of the Commissioner for Social Development.

Water, Fuel and Power

Water

The importance of developing water supplies for agricultural, domestic and industrial use in this land of few perennial rivers and uncertain rainfall is reflected in the territorial Development Plan. Two and a half million pounds were earmarked for the extension of township supplies in the period 1950-56 and one and a half million pounds, to be supplemented by contributions from Native Authorities, for the development of supplies in rural areas.

During 1952 the yield of the Dar es Salaam water supply was raised to approximately two million gallons per day. New machinery, mains, or complete supplies were installed at Mtwara, Tanga, Lushoto, Shinyanga, Tukuyu, Lindi and Songea. The total supply to consumers from the major township water supplies, which amounted to 226 million gallons in 1938 and 918 million in 1951, increased to 994 million gallons.

The most important rural supply installed in 1952 was that at Newala where water is raised through 1,200 feet up the scarp. Engineers of the Water Development Department undertook a full-scale hydrological survey of the Ruvu basin to investigate the possibilities of hydro-electric generation and irrigation works. A new superscale post of Irrigation Engineer was created in the department: it is to be filled by an engineer with a wide experience in tropical irrigation who will devote his attention to the many problems of water control which will have to be overcome if the drive for self-sufficiency in food production is to make real progress.

The water Ordinance, passed as long ago as April 1948, had still not been brought into effect at the end of 1952 owing to the lack of a Water Court Judge. A further attempt to get over the impasse was initiated late in the year, since wasteful use of the scarce surface water resources of the territory cannot be prevented until the Ordinance is given effect.

Fuel and Power

Apart from firewood and very limited hydro-electric generation, all power is derived from imported coal, petrol or oil. The Colonial Development Corporation continues its investigation of the coal deposits in the remote Songea and Njombe Districts but has not yet attempted to exploit them. The cutting of firewood for sale or for industrial use is controlled by the Forest Department: approximately 16 million solid cubic feet were licensed in 1952, about the same as the figure for the previous year.

RETAINED IMPORTS OF PETROLEUM PRODUCTS AND SALES OF MOTOR SPIRIT IN GALLONS

	Paraffin (retained imports)	Fuel Oils (retained imports)	Petrol (retained imports)	Sales of Motor Spirit
1938	(1,607,000)	2,138,000	(3,065,000)	2,500,000
1948	2,667,000	4,855,000	10,705,000	8,500,000
1950	2,024,000	*12,514,000	*13,367,000	12,000,000
1951	4,186,000	8,774,000	12,336,000	13,000,000
1952	4,515,000	11,223,000	13,283,000	15,000,000

*New bulk storage installations were completed and filled in 1949-50.

Electricity generation by the two Companies which hold exclusive licences in the major towns of the territory increased during the year. The Tanganyika Electricity Supply Co., Ltd. sold 40½ million units, an increase of 15%, most of this supply being for sisal estates and factories. The Company's new 5,000 kilowatt generator at the Pangani Falls will be in operation by June 1953 and this will permit the present restriction on supplies of electricity exported to the Mombasa area of Kenya to be raised. The Dar es Salaam and District Electric Supply Co., Ltd., sold nearly 24 million units (an increase of more than 20%) in the eleven centres in which it operates. One new supply, at Morogoro, came into use during the year.

There are many private generating plants on agricultural estates and mining leases. At the New Saza and Geita Gold mines, the Mpanda Lead Mines and the Mwadui diamond fields are major power stations privately owned. The Overseas Food Corporation has supplies at Nachingwea and Urambo. The supply installed by the Corporation at Kongwa is now operated by Government, and there are small Government supplies at Utete and at a number of experimental farms, training centres and hospitals. A supply at Kasulu will be completed in 1953, but it has not yet been possible to begin installations in other small townships where surveys have been carried out.

Land

A land policy which aims at making the fullest possible use of the land resources of the territory is being steadily pursued. There was no diminution in 1952 of the keen demand for land which has marked recent years: on the contrary, the number of Rights of Occupancy granted rose in almost every category, and no less than twenty-seven new Trading Centres were established.

RIGHTS OF OCCUPANCY GRANTED

	Agricultural and Pastoral		Trading and Residential	Miscellaneous (Missions, Schools, Factories, Labour Lines, Recreation Grounds, etc.)
	Long Term	Short Term		
1950	211	27	920	253
1951	136	11	997	304
1952	179	6	1,103	347

New alienations for agricultural purposes covered some 270,000 acres in all. It is, however, disappointing to note that only two applications were received from Africans for Rights of Occupancy for agricultural purposes.

In addition to these Rights of Occupancy 214 plots of land were allocated for the use of Government and High Commission departments—these included twenty-eight plots acquired under the terms of the Land Acquisition Ordinance, most of them for urban housing estates.

The total area over which Rights of Occupancy are now held is 1,938,941 acres. Registered freehold titles dating from the days of the German administration cover 413,646 acres. This alienation amounts to just over one per cent of the total land area of the territory.

A Land Utilization Board and four Provincial Land Utilization Committees have been appointed to advise on all matters affecting the exploitation of land.

Labour

Tanganyika's fundamental labour problem is the incomplete acceptance of a money economy by the mass of the population. Serious seasonal shortages of labour result at seed-time and harvest, when almost everyone wishes to be working in his own fields, while wage increases tend to promote absenteeism and reduce output because the target cash requirements of the worker are more rapidly satisfied.

Nineteen fifty-two opened with the issue of a new statement of Government's policy: this accepted the principle that it is in general desirable that Africans be encouraged to seek paid employment, it extended the functions of the Labour Board in advising on the best use of available labour, it increased the maximum African labour contract period to three years and it accepted in principle the need for total adult registration of all races, for technical schools, trade-testing and an apprenticeship system, and for training within industry for Supervisors. Early in the year a committee was appointed to enquire into the utilization and efficiency of Government labour.

The labour enumeration carried out in 1952 showed a decrease of 11,000 in the number of Africans in paid employment: 6,000 employees of the O.F.C. were laid off during the year but elsewhere reductions in the labour force were due rather to shortage in supply, after a year of good crops and high market prices, than to decrease in demand. However, the validity of the trends apparently indicated by the enumerations and estimates of recent years is a matter of some doubt since it is accepted that the total number of Africans in paid employment is in fact considerably higher than the best figures which can be given. Non-native employment figures are still more suspect: large increases are a sign of more complete enumeration rather than more people at work.

The areas of most acute labour shortage continue to be the Northern and Southern Highlands Provinces. In the latter wages offered compare unfavourably with those available in the Rhodesian copper mines or on the sisal estates of Tanganyika. In the north, recruitment of labour from the Central Province was hindered by an outbreak of plague, but the difficulties of which employers complain seem to arise in part from their own failure to notify the N.P. Labour Utilization Board of their requirements so that recruiting can be efficiently organized. Kikuyu were brought in to work

on a number of Northern Province farms but the compulsory registration which was introduced when the Mau Mau disturbances began led to the voluntary return to Kenya of many of these workers. The solution to the problem is more and more clearly seen to be the stabilisation of a labour force under good conditions of employment and housing.

The shortage of skilled labour will persist until training facilities catch up with growing demand.

The Advisory Committee on Technical Education considered the problems of training, apprenticeship and trade-testing schemes during the year, and while no trade-testing system of general application could be initiated enough agreement on methods and standards was achieved to enable the P.W.D. to institute departmental testing.

At the Trade School at Ifunda the educational standard of entrants is rising and applicants are now expected to have completed Standard VIII. The courses and the numbers enrolled at the end of 1952 were :—

Carpenters	113
Masons and Bricklayers	54
Painters	16
Plumbers	20
Welders	11
Turners	15
Blacksmiths	11
Tinsmiths	7
Electricians	28
Vehicle Mechanics	39
Tractor Mechanics	26
Tailors	11
Shoemakers	6
Total ...	357

The courses and the numbers enrolled at the end of 1952 were :—
Moshi.

The Natural Resources School being built at Tengeru was half complete at the end of 1952. The major departments of Government and of the East Africa High Commission have their established training schools. The scope of these establishments is indicated by the following figures of Tanganyika Africans in training during 1952 in some of the more important departmental schools :

Agricultural Department	150 men
Medical Department	112 men
	146 women
Posts and Telecommunications Administration	91 men
Railways and Harbours Administration	130 men

There was a continued general rise in wage rates during 1952, to keep pace with a rising cost of living. The Workmen's Compensation Ordinance has now been in force for three years and continues to operate satisfactorily. No serious industrial disputes occurred in 1952.

Two new Trade Unions, one of tailors and one of drivers, were registered during the year, bringing the total number up to three.

There are now twenty-one Employment Exchanges in Tanganyika: through them 7,325 applicants were placed in employment during 1952.

NUMBER OF AFRICANS IN PAID EMPLOYMENT

1945	...	Partial enumeration	345,000
1947	...	Partial enumeration	353,000
1949	...	Enumeration (corrected figure) ...	424,000
1950	...	Estimate	398,000
1951	...	Enumeration	455,000
1952	...	Enumeration	444,000

The total African population of Tanganyika is now about 7,750,000.

REPORTED NUMBER OF NON-AFRICANS IN PAID EMPLOYMENT

	European	Other Non-Africans	Total
1951	5,900 ...	10,800 ...	16,700
1952	10,200 ...	29,600 ...	39,800

The non-African population of Tanganyika is now about 100,000.

INDUSTRIAL CLASSIFICATION OF AFRICAN WORKERS—JULY 1952

Regular Workers:		
Agriculture, Forestry, Fishing	197,000	
Mining and Quarrying	14,000	
Manufacturing (including Electricity)	19,000	
Construction	18,000	
Commerce	13,000	
Transport and Communications	5,000	
Public Services	53,000	
Domestic Service	20,500	
Other Employment	16,500	... 356,000
Casual Workers:		
Agriculture, Forestry, Fishing	36,000	
Public Services	37,000	
Other Employment	15,000	... 88,000
		444,000

Currency and Credit Facilities

The supply of currency is supervised by the East African Currency Board, established in London. Currency is issued or redeemed in Tanganyika, Kenya, Uganda, Zanzibar, British Somaliland and Aden, in which countries it circulates freely, against sterling payment to or by the Board in London of the face value, subject to a commission of one-quarter per cent either way.

The Board's assets have been built up to give full cover for the circulation: there is no fiduciary issue, and there is no power to vary the parity of the East African shilling.

Figures of circulation, although they do not apply to Tanganyika alone, are a useful indication of economic conditions, since depression or deflation results in a return of currency to the Board and boom or inflation in an increased demand for its issue. In 1952 there was a further large increase in the circulation. This, together with the evidence of cost of living statistics—which indicate increased prices, except for clothing, over 1952 as a whole—and of wage rates and local produce prices, shows that it is too early to speak of deflationary trends. Indeed 157 new companies were

registered during the year, with a nominal capital of £11,363,000 (in 1951 there were 177 new registrations, capital £18,063,000 and in 1950 122 new registrations, capital £14,530,000). But there are many indications that the rapid expansion of activity by commercial concerns and by Government, which has marked recent years, has abated and a period of stability and consolidation appears to have begun.

Most of the commercial banking in the territory is carried out by three banks incorporated in the United Kingdom. The existence of a branch of a Netherlands bank in Dar es Salaam is a sign of the interest of Holland in Tanganyika's trade. The Bank of the Belgian Congo is also represented. The levelling off of the spectacular increases in deposits and advances of the post-war years corroborates other evidence of the stabilization of the economy. In the absence of facilities for holding liquid assets in local investment, and because of the need to keep sterling balances available in London for ready transfer to the Currency Board, the banks hold a major part of their assets in the United Kingdom.

The Post Office Savings Bank provides facilities for small depositors. The balance on deposit continues to grow.

The Land Bank has been in operation since October 1st, 1948, to provide loans for agricultural purposes on the security of land or chattels. The maximum amount of any loan is £10,000: but the maximum is further restricted to 70% of the value of land or 75% of the value of chattels: long term loans may be made for up to fifteen years, and short term up to five years. The number of outstanding loans at the end of 1952 was 214 and the sum advanced £251,020.

The Local Development Loan Fund makes short term loans for agricultural purposes to individual Africans or Native Authorities without necessarily requiring mortgage security and at a low rate of interest (usually 2½%). The number of outstanding loans at the end of 1952 was thirty-three and the sum advanced £40,290.

The Central Native Treasury Board receives on deposit the surplus balances of all Native Treasuries and makes loans from its funds to Native Treasuries to finance capital works. The total deposits at the end of 1952 amounted to £549,453 and the total of loans made to £27,131.

At the end of the year an Urban Housing Loan Fund was set up by Government from which loans will be made to Africans to enable them to build houses of permanent materials in the larger towns. Interest will be at prevailing bank rates. No loans, have as yet been made from this fund.

The Mining Loan Board had two loans, amounting to £975, outstanding at the end of 1952.

A Saving and Loan Society operates in Kenya, Uganda and Tanganyika to afford investment facilities at a fixed rate of interest and with easy conditions of withdrawal, and to provide loans for the purchase or erection

of houses. The Society is a subsidiary of the Pearl Insurance Co. The total sum advanced in the three territories now stands at approximately £1,000,000. The emphasis is upon loans to owner-occupiers but capital is also provided for commercial housing schemes.

Various self-help societies and trusts provide credit facilities for the members of particular religious brotherhoods. But there is no internal money or securities market even of a rudimentary nature, and it is still true that funds for large scale activities cannot be raised locally.

	Currency in Circulation in East Africa £		Post Office Savings Bank Deposits £
1938	6,500,000	1938	121,000
1948	20,195,000	1948	1,285,000
1950	26,249,000	1950	1,784,000
1951	35,927,000	1951	1,994,000
1952	44,791,000	1952	2,092,000

COMMERCIAL BANKS IN TANGANYIKA AND ZANZIBAR

POSITION AT 31ST DECEMBER £'000

	1938	1948	1950	1951	1952
Liabilities:					
Deposits	1,799	12,941	17,539	20,064	21,189
Balances due to Other Banks	1,066	385	1,953	2,613	1,815
Other Liabilities	45	87	199	442	539
Assets:					
Cash	459	850	1,297	1,562	1,979
Balances due from Other Banks	896	10,637	12,850	13,836	14,855
Loans for Industry	–	425	1,031	2,085	1,079
Loans for Agriculture	1,555	184	1,219	2,022	1,803
Other Assets	–	1,317	2,424	3,614	3,827
Total	2,910	13,413	18,791	23,119	23,542

PUBLIC FINANCE

The central Government budget has increased threefold in size in the last six years, a rise which reflects, of course, rising prices and wages as well as economic development.

In 1952 import duties remained the largest source of revenue. The proceeds of the Sisal Export Tax began to decline at the end of the year following the steep fall in market prices, but owing to forward selling the full effect of the fall will not be felt until 1953. Collection of Income Tax nearly doubled, but included considerable payments of arrears.

A loan of £2,280,000 was raised on the London market during the year bringing the total of Public Debt at the end of December to £5,736,000. Reserves and the surplus balance amounted to approximately £12,500,000, of this sum two-thirds represents reserves tied to specific purposes (e.g. development, provident fund, sinking funds), while the remainder represents the safety balance which must be held by a country in which there is no possibility of short term borrowing. Reserve and surplus balance investments, amounting to some £7,000,000 are placed in London.

The form of the budget has been changed for 1953, a division into Recurrent and Capital parts replacing the old distinction between the Territorial and Development Accounts. Many of the recurrent expenditure items previously financed from Development funds have become a charge on general revenue, but schemes financed from the Agricultural Development Reserve will remain, till the Reserve is exhausted in 1956, in a separate third section of the budget.

The Revised Development Plan put forward in 1950 to cover the period 1950 to 1956 originally proposed the expenditure of £24½ million of which £9 million was to be loan money, £5¼ million Colonial Development and Welfare grants and £6¼ million territorial reserves and transfers from revenue (leaving a gap of £4 million). Expenditure for the years 1950 to 1952 was £12½ million. The rise in costs over this period was such that the full plan could not now be completed at the cost originally estimated. Additional loans of £1 million are to be raised, and the territorial money available is now likely to be £1½ million more than was expected in 1950. Expenditure under the Plan will therefore be of the order of £23,000,000. In order to ensure the most productive use of capital funds, and to control the level of additional recurrent charges falling on the general revenue, the rapid difusion of development activity in all spheres of Government and in all parts of the territory was curbed in 1952, and the old emphasis on swift expansion of staff, of plant, of effort, gave way to a new concentration on the most economic and profitable use of existing resources.

The budgets of urban local authorities, with the exception of the Municipality of Dar es Salaam, are included in the central Government budget. A summary of revenue and expenditure of the Municipality, and of Native Treasuries in the past five years is included in the tables below.

CENTRAL GOVERNMENT FINANCE £'000

Revenue	Income Tax	Native Poll Tax	Import Duties	Export Duties	Excise Duties	Colonial Development and Welfare Grants	Other	Total
1947	644	806	1,849	78	446	135	1,801	5,759
1948	652	897	2,704	50	467	267	1,941	6,978
1949	1,097	962	3,150	93	557	566	2,727	9,152
1950	1,884	990	2,984	719	713	1,093	3,107	11,490
1951	1,973	1,132	3,469	1,419	756	1,175	3,182	13,106
1952	3,887	1,538	4,303	1,354	957	1,016	4,372	17,427

Expenditure	Central and Provincial Administration	Local Government	Public Works Department	Education	Medical	Other Recurrent	Development Plan				Total
							Natural Resources	Communications	Building and Works	Other	
1947 ...	330	347	464	318	394	3,515	208	37	20	159	5,792
1948 ...	400	457	528	373	479	3,605	327	166	272	231	6,838
1949 ...	515	529	777	724	638	3,879	462	410	341	474	8,749
1950 ...	647	574	1,027	709	683	4,487	626	1,106	906	798	11,565
1951 ...	697	706	1,819	1,071	903	5,522	632	1,391	1,101	706	14,638
1952 ...	728	1,026	2,617	1,332	1,096	6,501	756	2,210	1,213	814	18,323

LOCAL GOVERNMENT FINANCE £'000

	Revenue		Dar es Salaam Municipality			Expenditure			
	Government Grants	Fees, Licenses, Land Rents	Native Tax	Rates	Total	Administration and General	Roads and Works	Public Health	Total
1947 ...	–	–	–	–	(52)	–	–	–	(52)
1948 ...	–	–	–	–	(74)	–	–	–	(74)
1949 ...	41	45	15	11	112	29	24	47	100
1950 ...	47	52	17	37	153	42	47	52	141
1951 ...	62	63	15	59	199	54	88	76	218
1952 ...	55	82	30	97	264	53	64	103	220

	Revenue			Native Treasuries	Expenditure			
	Native Tax	Other	Total	Tribal Administration	Social Services	Natural Resources	Other	Total
1947	262	261	523	235	107	33	138	513
1948	306	274	580	283	122	44	76	525
1949	372	319	691	318	135	52	75	580
1950	369	346	715	355	153	64	78	650
1951	448	633	1,081	438	220	78	174	902

II.—PRODUCTION AND TRADE

Agriculture

Production

The predominant aims of Tanganyika's agricultural policy are to attain self-sufficiency in food supplies and at the same time to expand production of cash crops for export.

In 1952 food production was reduced by extensive flooding early in the year and by the premature end of the main rains over a great part of the country. The year ended with local shortages, which were accentuated by the failure of the short rains then due, so that preparations had to be made to import grain. This outcome emphasizes once again the country's dependence on its far from reliable rainfall and the great importance of all the teaching and the research which is directed towards securing the food supply.

Plantings of cassava, an increasingly popular food as well as a fine insurance against famine, were greater in many parts of the land : the Southern Province exported a record crop. No less than 18,000 tons of maize were marketed by African farmers in the Southern Highlands Province, but in the rest of the country the untimely rains and the widespread attacks of stalk-borer showed up the uncertainty of this crop. The finer grade of sorghum fared no

better. Production of both wheat and rice declined from the 1951 levels owing to weather conditions and the depredations of weaver birds: these two crops provide the most popular staple food for an increasing number of the Africans who live in Tanganyika, and since the areas suited to the growing of wheat are very limited in extent it is right and necessary that much attention and effort should be given to increasing the production of rice. Reports on the achievements and the difficulties of the men who have been experimenting in the mechanical cultivation of rice at Kilangali, and in the valleys of the Kilombero and of the Rufiji will be found amongst the reports on individual development schemes below. The disastrous effects of flooding particularly in the Rufiji valley prove the need to attain permanent control over the waters and demonstrate the vital importance of the hydrological surveys which have been, or are being, or will be, carried out in the basins of the great rivers of Tanganyika—the Pangani, the Ruvu, the Kilombero, the Rufiji, the Malagarasi. The detailed report by consultant engineers on the Pangani Survey was received during 1952: the immediate results are disappointing and development must be slow and tentative, less because of the complexity of the water engineering involved than because of the salinity of much of the soil. In the meantime the farmer and the mechanic working on the rich black clay of the Kilombero and Rufiji are gambling on the weather for their harvests but are proving their machines and methods, and are proving too that rational redistribution of land can be acceptable to an African society.

By such field experiments, by the work of its officers at experimental stations and by the training and deployment of Agricultural Instructors, the Department of Agriculture seeks to prevent shortage of food in any part of Tanganyika.

When shortage occurs, it is for the Department of Grain Storage to supply the cure, and it is for this Department at all times to maintain the supply of foodstuffs in the larger towns and for many of the sisal estates. Its aim, and the object of patient experiment, is the development of efficient means of storing the surplus grain produced in Tanganyika in years of favourable rains to serve the needs of the years of drought or flood. Storage in sealed pits which is now being tested may soon make this practicable: till then, as in the past, the Department must have recourse to imports from abroad when local supplies are failing.

By contrast with the food staples, the production of many export crops was very high in 1952. Estate production of sisal increased by 17% to 156,688 tons and the total production (162,185 tons) established a new record. Although the average export value was £137 per ton, prices were well below the peak values of 1951; African production declined sharply, hand-processed sisal finding few buyers on the falling market. Cotton production also reached a record level, and in this case the increase was in African production, in the Lake Province: estate production, which has never been great, declined with the introduction of stiffer grading rules.

Coffee shipments were higher than ever before. Almost two-thirds of the crop was produced by African growers in the Bukoba area, but the non-African estates in the Northern Province produced their expected 2,500 tons of parchment coffee. Tea, papain, cashew nuts, sunflower seed and sugar (9,666 tons against 8,805 in 1951) were some of the other important crops, production of which increased in 1952. The harvests of beans and coconuts were satisfactory. Weather conditions did not favour high yields of pyrethrum and tobacco, but there was an improvement in the average quality of these crops.

The Overseas Food Corporation harvested the following acreages of crops :—

	Groundnuts	Maize	Sorghum	Other Crops	Total
Kongwa ...	5,298 ...	3,419 ...	1,030 ...	955 ...	10,702
Urambo ...	17,463 ...	12,461 ...	6,373 ...	3,733 ...	40,030
Nachingwea	8,082 ...	4,324 ...	1,039 ...	2,524 ...	15,969

A satisfactory yield of tobacco of good average quality was obtained at Urambo, but the harvest of other crops was disappointing both there and at Nachingwea, as a result of unfavourable weather conditions and pests. On the other hand results at Kongwa were outstanding, average yields per acre being :

	lb.
Groundnuts	272
Maize	2,240
Sorghum	2,444

The Corporation imposed further restrictions on cultivation at Nachingwea and Urambo in the 1952/53 season to give time to determine by experiment the most suitable crops and methods of cultivation. In both areas the acreage of groundnuts is being greatly reduced in favour of other crops, notably velvet beans, soya beans, millet and tobacco.

Marketing.—World prices for most cash crops declined in 1952 from the very high levels of recent years; coffee prices were a notable exception. The prices paid to producers for staple foods and for groundnuts and sesame remained subject to Government control : while there was no change in the wheat price, the others were increased as the following table of railhead market prices shows.

	1950 Cts.	1951 Cts.	1952 Cts.
Maize and white sorghum (per kilo)	23 ...	32 ...	33
Wheat (Grade I) (per kilo)	41 ...	50 ...	50
Paddy (per kilo)	28 ...	40 ...	60
Groundnuts and sesame (per kilo)	44 ...	55 ...	80

The only crops whose purchase and sale is still subject to Government control are maize, white sorghum, wheat and paddy.

The association of African producers into marketing societies and co-operatives is increasing. Interest in economic farming is growing (a few Africans are now producing pyrethrum, bright tobacco and papain), and high prices have encouraged, and made possible, the purchase of farming equipment, tractors and lorries by individuals and groups.

With the expiry of contracts with various agencies of the Government of the United Kingdom a new pattern of free, but co-operative, marketing of the main export crops developed. Most of the cotton crop of the Lake Province had been sold forward to the Raw Cotton Commission, but 10,000 bales were auctioned in Kampala by the Uganda Lint Marketing Board on behalf of the Tanganyika Lint and Seed Marketing Board. The Tanganyika Board disposed of the Eastern and Southern Provinces crops by auction and the Northern and Tanga Provinces crops by tender. Seed surplus to planting requirements was also auctioned.

The Songea and Nyamirembe Tobacco Boards marketed the crops grown by Africans in their respective districts, and the Southern Highlands Non-Native Tobacco Growers' Union disposed of its members' production on the world market.

Pyrethrum was again sold by the Tanganyika Pyrethrum Board through the Joint East African Pool at prices which give a premium to high pyrethrin content.

The Bukoba coffee crop was purchased and processed by agents of the Bukoba Native Coffee Board, graded and sold by auction in Mombasa, the contract with the British Ministry of Food not having been renewed. The Meru Native Coffee Growers Association sold its small crop at a fixed price to the Ministry. But the Kilimanjaro and Rungwe Unions sold their coffee by auction at Moshi. Non-native growers sold 1,000 tons through their Association to the Ministry of Food and sent the remainder of their crop to the Nairobi auctions.

Local Production Committees operate in the areas of Arusha, Moshi, Mbulu, Morogoro, Iringa and Kilosa to serve the non-native farming communities. These committees advise the Director of Agriculture on the eligibility of farmers for "guaranteed minimum return" payments for certain food crops, and also advise the Land Bank on applications for loans. Payments in 1952 under the minimum return guarantee amounted to £8,500: the tangible result was an increase of more than 1,000 tons in sales of maize by Northern Province non-native growers to the Department of Grain Storage.

Statistics.—The only reliable agricultural statistics available are figures of estate production and of exports. African production can only be assessed in the vaguest way. The quantities of crops passing through primary markets are known, but caution is necessary in drawing conclusions from these figures in view of the following considerations:

1. Significant quantities of produce are bought by traders without passing through markets;
2. African farming is still essentially subsistence farming; the food crops which are brought to market are the surplus which remains after the needs of the farmer have been satisfied, and are but a fraction of total production; the population is increasing, so that less may be marketed even when more is produced—this is especially true of wheat and rice which are becoming increasingly popular staple foods;

3. The quantity of food crops marketed is influenced not only by the size of the harvest but also by depletion of household stocks kept from year to year, by restrictions imposed on marketing by Native Authorities as a precaution against famine, and by the presence or absence of other ready means of obtaining the limited cash income which is all most peasants desire;

4. High prices are two-edged : up to the peasant's cash requirement they attract, but they satisfy that requirement more rapidly and the labour of threshing or husking the sooner outweighs the attraction of the market;

5. When world demand stimulates an almost unpremeditated production as of hedgerow sisal in 1951 and castor seed in 1952, market figures may give to a crop an importance which it does not really possess in the rural economy of the territory as a whole.

Studied in the light of these considerations, the following tables give a fair picture of the agricultural interests of Tanganyika. For 1952 they show clearly a downward trend of surplus food production in the rural areas, and a solid increase in the production of the majority of export crops.

Marketed Quantities of Food Crops:	1950 Tons	1951 Tons	1952 Tons
Maize, Millet and Sorghum ...	76,854	68,166	49,484
Cassava	3,052	11,594	29,277
Wheat	8,052	5,569	5,264
Paddy	19,940	21,952	15,639

Exports of Agricultural Produce	Highest Recorded Exports prior to 1952		1950	1951	1952	Value 1952
	Year	Tons	Tons	Tons	Tons	£
Sisal	1951	142,106	118,909	142,106	156,167	21,708,053
Coffee	1935	18,588	14,991	16,565	18,619	5,540,583
Cotton Lint	1941	13,106	7,006	8,315	11,105	4,679,162
Beans and Pulses	1951	10,638	8,078	10,638	23,184	997,326
Castor Seed	1951	7,570	3,302	7,570	12,345	881,155
Groundnuts	1936	22,786	75	3,499	9,435	634,364
Sunflower Seed	1951	9,512	8,911	9,512	17,708	619,237
Cashewnuts	1951	8,165	6,532	8,165	11,506	531,988
Tea	1951	821	484	821	1,011	302,787
Copra	1928	9,318	386	–	5,505	277,040
Cassava	1951	6,342	142	6,342	15,177	265,082
Maize	1948	3,070	7	550	3,353	240,123
Beeswax	1948	905	315	673	599	233,469
Oilseed Cake	1950	2,810	2,810	2,242	8,456	188,314
Papain	1948	130	19	18	43	168,079
Tobacco	1948	1,421	1,130	781	641	135,444
Kapok	1950	653	653	381	468	103,882
Millet and Sorghum	1928	7,732	1	4,137	2,767	73,942
Vegetable Oils	1940	2,268	1,400	130	685	70,327
Gum Arabic and Copal	1944	2,567	2,428	1,783	583	50,450
Pyrethrum	1945	697	175	149	156	41,273
Soya Beans	1950	994	994	598	600	31,158
Sesame Seed	1948	5,341	–	22	496	27,909
Bambarra Groundnuts	1951	350	35	350	785	21,440
Rice	1938	17,965	30	151	343	14,906

Fisheries

Sea.—The Government motor fishing vessel *Patoni* was delivered in February 1952 but was still being equipped for experimental fishing at the end of the year. The progress of the general survey of the economic potentialities of African fishing along the coast was thus delayed. But the Fisheries Officer was able to visit a number of the centres of the industry to investigate fishing methods in use and to experiment in trapping, trolling, ring-netting and long-lining. A Master Fisherman was appointed during the year: he has been working on the refitting of the *Patoni* and instructing the crew in the art of net-making.

Lakes and Rivers.—The production of dried fish from Lake Tanganyika amounted to 1,186 tons in 1952, compared with 1,214 in 1951. The fisheries of Lake Rukwa, reopened for the first time after the drought of 1949, produced over one million tilapia and 21½ tons of kambale.

The Government motor vessel *Sangala* began experimental fishing on Lake Tanganyika. Samples of new types of dagaa net were tested and arrangements made for the commercial supply of a satisfactory type for African fishermen.

A detailed investigation of the Malagarasi was carried out during the year.

Fish Farming.—At the experimental station at Korogwe promising experiments with *Tilapia melanopleura* were begun together with experiments in rice-cum-fish farming using a Malayan species of long-term rice. Training courses were held for instructors. The number of fish-ponds and stocked natural waters throughout the territory is increasing: one of the earliest ventures, at Moshi Prison, is now on a sound revenue-earning basis.

Exports.—547 tons of fresh and dried fish were exported from Tanganyika during 1952, compared with 427 tons in 1951 and 607 tons in 1950.

Livestock

In spite of the culling campaigns which are in full swing in Mbulu, Nzega, Kondoa and Sukumaland the stock population of Tanganyika continues to rise. Estimated numbers are:—

	Cattle	Sheep and Goats
1925	4,472,000	... 4,333,000
1938	5,087,000	... 4,761,000
1948	6,425,000	... 5,263,000
1952	6,552,000	... 6,099,000

There is no African tradition of the economic use of cattle, except among the Masai and a few lesser tribes, and even there the exploitation is that of a subsistence economy. The profit which livestock products now bring, and will increasingly bring, to owners, local authorities and the territory as a whole is the result primarily of deliberate encouragement by Government.

Auction markets are maintained by Native Authorities and stock owners are encouraged by official propaganda or compelled by culling orders to sell at least the natural increase of their herds for slaughter locally or in the towns or at the canning factories. Immature stock that comes to market is bought by cattle traders for fattening, or, failing other buyers, by the Veterinary Department to be held in the Mkata Plains ranch. The total number of cattle marketed in 1952 was 281,622 against 181,223 in 1951 and 211,812 in 1950. 63,000 head passed through the Dar es Salaam meat factory of Tanganyika Packers. The average market price per head fell from about Shs. 150/- (the 1951 figure) to Shs. 120/- in the middle of the year but recovered in the last three months of 1952.

Sheep and goats marketed numbered 161,951 against 113,123 in the previous year.

Hides and skins are usually dried by cattle owners and sold to retail traders in markets or in their shops. Drying frames and sheds are maintained by Native Authorities for the use of butchers and others and for demonstration purposes. The success of the campaign to encourage suspension rather than ground drying is shown by the following figures, giving the percentage of suspension dried hides and skins to the total exported :

	Hides	Skins
	%	%
1940	21·2 ...	3·8
1950	64·6 ...	79·1
1952	86·0 ...	88·0

Exports of hides decreased from 4,023 tons in 1951 to 3,894 tons in 1952, the total value falling with the world market price by nearly £500,000 to £1,055,957. Almost the whole of the production of hides and skins is exported.

Ghee is produced in primitive creameries, some owned by retail traders but most by Creamery Boards under the ægis of Native Authorities. The output of all creameries is subject to grading by the Veterinary Department. The total production in 1952 reached a new record of more than 967 tons against 911 tons in 1951. Most of this ghee is consumed within Tanganyika, and 1952 exports only amounted to 53 tons.

Fresh milk supplies in urban areas are still far from satisfactory. Government dairies continue to operate in Lindi, Tanga and Dar es Salaam. The Prison Farm at Kingolwira sends supplies to Dar es Salaam and Morogoro. In Dar es Salaam one enterprising firm is importing milk by air from Mombasa and this move, coupled with the ending of price control, has brought supplies nearer to the level of demand at the much higher price now ruling. Small quantities of fresh butter, cheese and pork products are produced for local consumption by the small number of non-native farmers who specialise in livestock products.

Forestry

In the course of 1952 a statement of Government's forest policy was prepared. It laid down that by 1962 eight per cent of the land and swamp area of Tanganyika (or 17½ million acres) should be reserved as forest, and that by the same date 40,000 acres of Forest Department plantation should be established. The main emphasis is to be placed upon reservation and management of natural forest and plantation is to be restricted to denuded areas in the highlands and on the coast.

During the year 2,155 square miles were added to the forest estate, which now covers 10,945 square miles (3·2% of the land and swamp area). One of the new reserves was the first Native Authority reserve to be gazetted, an area of 20 square miles in the Pare District. Forest Department plantations were increased by 1,881 acres (1,071 of softwoods) to a total of 12,100, and another 1,000 acres were planted by Native Authorities or under the ægis of Land Usage Schemes. Departmental controlled-yield management was applied to a further 12,000 square miles.

The Colonial Development Corporation continued its wattle planting programme at Njombe, sowing 6,175 acres to bring the total up to 9,200.

The commercial output of timber in 1952 was about 61,000 cubic tons of which nearly one quarter was exported, after grading and by license. Including trade with Uganda and Kenya, hardwood exports were valued at £309,000 and softwood exports at £155,000. More than one and a half million building poles were recorded as cut and over sixteen million solid cubic feet of firewood. Exports of mangrove poles were valued at £26,000. Exports of minor forest produce such as beeswax, gum and wattle bark declined from the high figures of 1951—a characteristic phenomenon in a year following good crops. There was a well-marked recession in the timber export trade in the latter part of the year which, combined with the known fact that Government building in 1953 would be much reduced, produced a strong buyer's market in spite of the twenty per cent increase in controlled prices which was permitted in May.

Some areas, especially of Podocarpus forest, are still being exploited to an extent which is not compatible with a sustained yield. But there are indications that the use of fine timbers for each and every purpose is gradually giving way to a more rational utilization. Producers are still backward in logging and haulage technique and in milling and storage equipment. As a result seasoned timber is virtually unobtainable.

Seventy-eight sawmills were operating in the territory in 1952. The largest producers were Grewals Sawmills Ltd. (6,200 cubic tons), Kagera Sawmills Ltd. (5,000), Steel Bros. Ltd. (3,000) and Tanganyika Timbers Ltd. (3,400).

Mining

The total value of minerals exported in 1952 was about £6¼ million, a figure inflated by the disposal of the accumulated diamond production of 1950 and 1951 which had been withheld from the market during the course of the long-standing dispute between Williamson Diamonds and the Diamond Corporation. But actual 1952 mineral production, valued at about £3½ million, was a record.

At the Mwadui mine of Williamson Diamonds Ltd. the installation of a new treatment plant began. This plant, which will cost more than £1 million, will handle 3,000 tons of gravel in twenty-four hours and will include what is believed to be the longest single drive belt conveyor in Africa (6,000 feet).

Gold production was approximately the same in quantity as in 1951 but its value was considerably higher since after May 1st producers were allowed to sell freely in the premium market against payment in dollars. Premium market sales had previously been restricted to forty per cent of output. Sales during the year at premium prices amounted to 52,000 ounces of refined gold and realized nearly two million dollars.

Uruwira Minerals concluded an agreement in 1952 with the American Defence Materials Procurement Agency by which the company will receive a loan of 1,640,000 dollars for the expansion of lead production. Construction of a recovery plant which will treat 1,000 tons of ore in twenty-four hours began. The output of the pilot plant increased to almost 5,000 tons.

Sheet mica exports were fifty-eight per cent higher than in 1951. A new departure in 1952 was the import of waste mica from Southern Rhodesia to increase the output of "splittings" exported from the Morogoro factory of F. F. Chrestien and Company.

Tin production fell by almost one-third as the Colonial Development Corporation suspended production at a number of properties acquired by it during 1951 in the Bukoba area, where the Corporation holds a special exclusive prospecting licence, in order to carry out surveys and tests to make possible the systematic development of the tinfields as a whole.

A newly-formed company, the Pugu China Clay Co., took over the kaolin deposits at Pugu near Dar es Salaam and applied for a comprehensive mining lease over an area of ten square miles. Production of refined kaolin and the search for overseas markets for it continued.

Fourteen exclusive prospecting licences (covering 1,388 square miles) and 2,049 mining claims (covering 397 square miles) were current at the end of the year. A further exclusive licence for nickel, covering 1,800 square miles in the Southern Province, had been approved.

The coal investigations of the Colonial Development Corporation were virtually completed. Two hundred and sixteen million tons of extractable coal of good quality have been proved in the Ngaka and Kitewaka fields.

A mineral oil prospecting licence was granted in December to the D'Arcy Exploration Co. jointly with the Shell Overseas Exploration Co. This covers the whole of the coastal belt, adjacent islands and territorial waters. Preparations for survey and prospecting operations on Mafia island were advanced by the end of the year.

The search for base metals by diamond core-drilling and by underground and surface reconnaissance continues over wide areas. In the neighbourhood of Dar es Salaam and Tanga limestone and clay deposits were examined to determine whether they were adequate and suitable for the establishment of a cement works.

The Geological Survey Department continued its programme of map-making, geological investigations and diamond drilling in many parts of the country. At Dodoma the Geological Museum and the Department's laboratories are well equipped to provide the mining industry with facilities for identification and analysis of specimens and research in extraction methods.

PRINCIPAL MINERAL EXPORTS

	1951 Quantity	Value £	1952 Quantity	Value £
Diamonds	8,600 carats	89,000	331,600 carats	4,607,000
Gold (refined)	66,000 troy oz.	820,000	65,000 troy oz.	850,000
Lead	2,964 tons	401,000	4,837 tons	505,000
Mica	69 tons	120,000	105 tons	132,000
Tungsten	39 tons	60,000	36 tons	46,000
Tin	92 tons	68,000	58 tons	42,000
Salt	3,870 metric tons	35,000	4,254 metric tons	40,000
Silver (refined)	36,000 troy oz.	12,000	36,000 troy oz.	11,000

Salt sold for consumption in Tanganyika in 1952 : 11,618 metric tons valued at £91,000.

Industry

Most of Tanganyika's industry is primarily concerned with the processing of the natural resources of the Territory. In all cases in which production is capitalised—mining, extensive timber extraction and estate cropping, especially of sisal, sugar, tea, coffee and tobacco—the initial processing is carried out by the producer; while the produce of African peasant farmers is usually processed by local trading firms, the majority of them Indian-owned. These firms' other interests are not in production but in wholesale purchase and storage of crops, in the financing of retail buyers, and in some cases in the export trade. African co-operatives, and boards under the ægis of Native Authorities, are now curing some of the tobacco and coffee produced by African farmers and manufacturing ghee and butter. But the ginning of cotton, and the commercial milling of copra, cottonseed, groundnuts, sesame, paddy, cassava, maize, wheat and sorghum is in the hands of wholesale traders. Hides and skins are dried by the individual cattle owners or by African or Somali butchers.

The processing carried out in Tanganyika, whether by producers or by middlemen, is often confined to the initial treatment of raw material which is then exported in bulk for finishing: examples are sisal, cotton, coffee, tobacco, minerals and hides and skins.

But there is a limited range of consumer goods produced locally from local materials—flour for example, edible oils, sugar, salt, canned meat, fruit juice, butter, ghee, cheese, soap, leather goods, furniture, bricks and tiles. A coir factory has been opened. Under investigation are the possibilities of a cement works and a soft fibre processing factory.

There are also a few industries relying on imported raw materials, alone or together with local materials. They include cotton weaving and finishing (not spinning), metal can manufacture, paint and varnish making, oxygen and oxy-acetylene manufacture, brewing, engineering and building. Considerable quantities of metal cans and paints are exported to neighbouring countries. The building industry has been operating at a very high level for the past three or four years. In 1952 the value of new private buildings constructed in the seven largest towns (for which alone statistics are available) was about £1,600,000—roughly the same as in 1951. Towards the end of the year there were signs of a decrease in the rate of building in these larger towns, but considerable building activity is in progress at some of the smaller centres.

Government seeks to encourage the development of industry by providing specialist research and advisory services, by admitting fixed plant and machinery duty-free, by refunding duties on certain materials imported for use in local industries, and in a more general way, by the provision of industrial sites in towns, by the improvement of the territory's communications system and water supplies, by encouraging the development of power supplies and by the gradual implementation of progressive educational and labour policies.

Textile manufactures and glazed pottery production are subject to licensing by the East African Industrial Council: exclusive licences are granted in suitable cases for periods up to twenty years. To encourage improvements in the milling industry legislation was introduced in 1952 which provided for the licensing of oil, wheat and rice mills and gave powers to a Milling Board to enforce certain standards and to limit the number of mills operating in any given area. The industry has in the past been the victim of uneconomic competition between concerns inadequately equipped and capitalised.

Industry in Tanganyika is almost exclusively a sphere of private enterprise. There is only one major undertaking for which Government has provided a large share of the capital: that is Tanganyika Packers, which now operates two meat processing factories. Native treasuries have provided capital for pioneering such ventures as lime quarries as well as much of the ghee, coffee and tobacco processing which is now in the hands of co-operatives and statutory boards.

All factories are required to be registered under the Factories Ordinance. The establishments so registered in 1952 were as follows:

INDUSTRIAL ESTABLISHMENTS

Registered under the Factories Act, 1952

Industry	Number of Factories	Approximate Number Employed
Primary Processing:		
Coffee curing	3	630
Coffee pulping	59	480
Copra drying	3	20
Cotton ginning	31	2,350
Crop processing	5	390
Essential Oil extraction	3	30
Fish curing	1	80
Flour milling	144	1,290
Hides and Skins processing	26	370
Jaggery manufacture	28	290
Kapok ginning	5	120
Mica cutting and grading	2	180
Papain manufacture	1	10
Pyrethrum drying	1	20
Rice milling	57	720
Rubber processing	1	10
Salt works	4	60
Sawmills	71	3,450
Sisal and Sansevieria processing	203	19,300
Sugar manufacture	1	370
Tea manufacture	8	600
Tobacco processing	3	820
Vegetable Oil extraction	64	1,180
	724	32,770
Food Production:		
Aerated Water manufacture	38	290
Bacon factories	5	50
Bread and flour confectionery	47	430
Breweries	2	320
Dairy produce	2	30
Edible Oil refining	3	60
Food canning	4	830
Fruit Drinks manufacture	2	20
Ice manufacture	9	100
Milk pasteuring	1	5
Sugar confectionery	1	15
	114	2,150
Other Secondary Industry:		
Aluminium ware manufacture	2	20
Boat building and repairing	5	680
Brick and Tile making	7	390
Can manufacture	1	220
Chemical products	1	20
Cotton weaving	1	30
Electro-plating	1	10
Engineering, general	34	1,930
Fez Cap manufacture	4	10
Industrial Gas Manufacture	1	30
Jewellers and Goldsmiths	22	90
Leather Goods (other than footwear)	3	30
Letterpress printing	22	650
Paint manufacture	1	50
Petrol and Oil packing	3	380
Pharmaceutical manufacture	1	10

Industry	Number of Factories	Approximate Number Employed
Other Secondary Industry:—contd.		
Photographic developing and printing	9	30
Precast Concrete works	8	180
Sheet metal work	15	70
Ship breaking	1	30
Shoe making and repairing	79	240
Soap manufacture	39	430
Tailoring	575	1,400
Tanning	2	70
Textile dyeing and printing	2	80
Toilet goods (other than soap)	3	10
Woodworking	188	2,860
Wrought Iron work	5	20
	1,035	9,990
Public Utilities:		
Electric Power generation	17	540
Sewage pumping	2	10
Water supply	58	350
	77	900
Maintenance and Repair:		
Agricultural Plant	59	780
Aircraft	2	20
Bicycle	16	30
Dry Cleaning	5	40
Electrical	9	160
Laundry	4	20
Locomotive and Rolling stock	10	2,540
Motor Vehicle	116	2,590
Typewriter	2	10
Tyre re-treading	1	40
Watch	4	10
	228	6,240
Total	2,178	52,050

Internal and External Trade

African peasant farmers form the vast majority of consumers in Tanganyika and the volume of the territory's trade depends very largely on the quantities of cash crops and livestock products they can market and the prices these command. African farm produce passes into the hands of Indian or Arab retail traders in the local markets; from them to millers and wholesale merchants (who are also transporters and often enough finance the retailer) at the nearest railhead; and thence, with or without processing, to export houses established in the coastal ports. Imported goods—cloth, beads, hoes, bicycles—pass through the same channel in the opposite direction.

Other channels of traffic take produce from estates and mines to agents, marketing associations or direct to the buyer overseas. To the estates and mines go the machinery, imported largely through agencies, and the labour rations, in favourable years local produce intercepted at the retail or wholesale stage, in unfavourable years imports brought in by the Department of Grain Storage.

In 1952 peasant production of cash crops, especially of cotton and coffee, was high. Cattle and hides and skins were also marketed in large quantities. Prices, with a few exceptions, moved down from the very high levels of 1951, but enough money was in African hands to keep demands for the stock trade goods strong. As import prices and supplies alike became easier there was a marked rise in quantities, for example of textiles, brought into the country. But there was not much evidence of new demands being created among Africans. Peasant production is not yet being promoted significantly by the desire to obtain cash to meet growing needs of shop goods : increased marketing of livestock is due in the main to culling campaigns, increased marketing of cash crops, most of all to the vagaries of the season. The African peasant is conservative and is generally content to purchase what has been offered for the last few decades. The introduction of new lines of goods, a greater attention to salesmanship and advertisement, and an improved system of distribution could have a profound effect on the productive output of the peasant. The customer has not been really studied. Light will soon be thrown on this difficult problem by the report of the investigator who has been surveying retail distribution in Tanganyika and Nyasaland under a scheme financed in part by a Colonial Development and Welfare Grant.

Mine and estate production was also high in 1952, and as a corollary imports of machinery, vehicles, base metal goods, and fuels and lubricants rose markedly. These imports were supplemented by the sale through the East African Stores Disposal Organization of large quantities of stores and equipment surplus to the needs of the Overseas Food Corporation. The Disposal Organization endeavoured to keep in touch with trade interests through its Tanganyika Advisory Board, and was able to make considerable sales abroad.

With ports, railways and road transport working under heavy pressure, serious difficulties were experienced in moving produce down to the coast and trade goods and imported materials up-country. By the end of the year, however, most of the backlog had been cleared, and trade stocks were by then both plentiful and reasonably well distributed.

Trade with Kenya and Uganda continued to be an important element in the commerce of the territory. From the north manufactured tobacco, sugar, wheat flour and tea are imported : ghee, honey, hides and timber are exported in return. By reason of this trade and the valuable cotton crops grown in its hinterland the Lake Victoria port of Mwanza is becoming increasingly important. The number of large firms with branches in the town steadily grows.

The only commodities subject to distribution control by Government at the end of 1952 were sugar, jute products and vehicles from dollar sources. Price control remains in force over a much wider range of goods.

Imports from non-sterling areas are still subject to control and the more restrictive licensing policy resulting from the 1951 balance of payments crisis of the sterling area showed itself in the considerable fall in imports from Japan

in 1952. Nevertheless, imports from the United States of America itself increased in value to the same level as in 1950, that is half the value of 1947 and 1948 imports: they consisted mainly of machinery and spare parts. Large increases occurred in the value of imports from the United Kingdom, India, Germany and the Netherlands. Supplies of petroleum, formerly obtained from Persia, were imported from the Bahrein Islands. As many prices levelled and fell during the year the figures represent substantial increases in quantity, and provide a clear indication of the progress of Tanganyika's development.

The most striking rise in exports was that in the value of goods sent to the United States—from £7,000,000 in 1951 to almost £10,000,000. But the United Kingdom, always Tanganyika's largest customer, took about £5,000,000 worth more than in the preceding year. Exports to Germany rose by three-quarters of a million pounds. These increases consisted in the main of cotton, diamonds and coffee: sisal exports increased in quantity but not in value, hides and skins declined in value while quantity remained much the same, exports of timber were down in quantity and value alike.

The visible balance of trade remained favourable, exports exceeding imports by more than £10,000,000.

NET IMPORTS AND EXPORTS

£'000

Classification of Imports	1938	1948	1950	1951	1952
Machinery and Vehicles	706	7,066	7,946	6,828	10,114
Textiles	707	4,646	4,539	6,606	7,507
Base Metal Goods	322	3,225	3,601	3,907	5,711
Fuels and Lubricants	327	1,365	1,921	1,977	3,043
Non-metallic Minerals	154	792	1,391	1,855	2,284
Food, Drink and Tobacco	550	2,284	1,259	1,643	2,082
Clothing	170	727	893	1,594	1,611
Chemicals	111	557	714	1,049	1,471
Rubber	57	353	434	758	805
Paper	59	217	219	322	622
Wood and Timber	25	217	84	115	140
Hides and Leather	61	133	30	35	42
Fats and Waxes	–	59	6	11	23
Precious Metals	1	13	10	14	14
Gold and Specie	89	34	171	8	2
All Other Articles	198	955	1,124	1,399	2,024
Total	3,537	22,643	24,000	28,121	37,495

Classification of Domestic Exports	1938	1948	1950	1951	1952
Sisal	1,425	8,930	11,846	23,690	21,708
Coffee	386	897	3,471	4,503	5,540
Cotton	380	1,328	1,443	2,767	4,679
Diamonds	4	1,040	1,371	89	4,607
Oil Seeds and Waxes	200	554	790	1,904	3,938
Other Food, Drink and Tobacco	423	1,620	1,320	2,074	2,734
Hides and Skins	202	499	1,387	1,680	1,056
Gold and Specie	589	503	890	831	861
Base Metals	50	53	140	407	752
Wood and Timber	21	146	342	490	339
All Other Articles	28	660	768	908	805
Total	3,708	16,230	23,738	39,343	47,020

£'000

Value of Imports from	1938	1948	1950	1951	1952
United Kingdom	1,015	10,574	13,405	12,521	17,670
India	162	1,827	2,508	3,098	4,227
Japan	593	123	1,227	2,851	2,356
Germany	461	12	279	819	2,036
United States	242	2,961	1,528	1,066	1,647
Union of South Africa	60	880	963	1,102	1,194
Netherlands	106	–	502	753	1,141
Italy	15	485	522	1,024	1,015
Bahrein Islands	–	170	185	462	958
Belgium	46	649	122	858	731
Persia	–	719	1,122	637	46
Other Countries (including in 1952 all parcel post)	837	4,243	1,637	2,930	4,474
Total ...	3,537	22,643	24,000	28,121	37,495

Value of Domestic Exports to	1938	1948	1950	1951	1952
United Kingdom	1,198	8,471	9,973	15,958	19,674
United States	175	1,146	2,208	7,014	9,956
Germany	282	–	1,530	1,534	2,235
India	251	753	1,494	1,855	2,014
Australia	–	438	1,121	2,157	1,952
Netherlands	140	–	910	1,619	1,874
Belgium	389	–	681	2,431	1,766
Union of South Africa	83	710	1,262	1,278	1,351
Canada	–	1,235	572	1,052	755
Japan	15	–	851	70	233
Other Countries (including Ships Stores) ...	1,175	3,477	3,166	4,375	5,210
Total ...	3,708	16,230	23,768	39,343	47,020
Value of Re-exports	361	950	1,286	1,003	954

VISIBLE BALANCE OF TRADE £'000

	Imports	Exports and Re-exports	Unfavourable Balance	Favourable Balance
1938	3,537	4,069	—	532
1948	22,643	17,180	5,163	—
1950	24,000	25,054	—	1,054
1951	28,121	40,346	—	12,225
1952	37,495	47,974	—	10,479

Note:—From 1950 transfers between Tanganyika and Uganda and Kenya for internal consumption are excluded from the figures in these tables Detailed information which would be needed to make earlier figures correspond precisely is not available, but as the figures stand direct comparison is invalidated only in a few instances.

APPENDIX I

THE DEVELOPMENT PLAN: PROGRESS REPORTS

AGRICULTURAL DEVELOPMENT SCHEME

Training of Agricultural Instructors, Ukiriguru.—Forty-five instructors of the Agricultural Department and twelve teachers completed their two-year course, fifty-two instructors and eighteen teachers completed their first year and fifty instructors and thirty teachers entered upon their training. Valley soils were waterlogged by the heavy rains but effective demonstrations were laid out on the hills and a promising disc-ridger developed for oxen or light tractor draught. Practical work included drainage and terracing by ox-drawn dam scoops.

Agricultural Training for Indians.—Nineteen students completed the first two-year course in April, of whom two returned for further studies. The second course numbers only ten, and few applications have been received for the third course. Buildings have been completed and demonstration equipment acquired.

Improvement of Copra Industry.—Inspection of existing plantations, inculcation of cleaner cultivation methods and supply of selected seed at cheap prices continues.

Extension of Ukiriguru Experimental Station.—The electrical installation alone awaits completion.

Bukoba Coffee Sub-station.—Labour lines and cattle sheds were finished in April. The herd has been built up to 100 head and the oxen trained and used for cultivation. Clearing of couch-infested land continued and experiments were laid down, including fertilized and compost trials, microplot trials and tests of hibiscus and loofah. Cassava is being multiplied for distribution in the district. It has been agreed that future recurrent expenditure on this scheme will be met by the Bukoba Native Coffee Board.

Cotton Experimental Station, Ilonga.—Cotton selection continued. Two major trials of insecticides were conducted, one by Pest Control Ltd. using low volume spray, the other a dusting trial carried out by the staff of the Empire Cotton Growing Association. American bollworm was shown to be largely controlled. All buildings and installations are now complete except for certain laboratory fittings and the engine for the ginnery.

Improvement of Beeswax.—The Research Station buildings near Tabora were finished during 1952. The campaign to stop the destruction of bee colonies by honey-hunters and to improve the cleanliness of wax marketed continues: progress is noted in areas where instructors have now been operating for a year or more.

Fisheries (Inland).—Experiments continued on Lake Tanganyika, where the motor vessel *Sangala* came into service, and at the fish-farming experimental station at Korogwe and the sub-stations at Mahiwa and Mtitu.

Fisheries (Marine).—The Fisheries Officer continued his survey of the coasting fishing industry. The motor fishing vessel *Patoni* was delivered early in the year.

Rungwe Small-Holdings.—Six small-holdings are now well established. Supervision and instruction by an agriculturalist on the staff of the Moravian Mission continues.

Food Production Farms.—The experiments in mechanized production of paddy at Kilangali were closed down, as it became clear that the scheme could not be expanded to an economic size without vastly increased capital expenditure, especially in the acquisition and clearing of higher land and the provision of effective drainage. The site is now being used as a ranch for immature stock. At Lupiro and Kivukoni 210 acres were planted with paddy; some loss was suffered owing to bunds being damaged by hippopotami but results were promising.

Agricultural and Natural Resources School, Tengeru.—Approximately half the £200,000 building programme was completed by the end of 1952.

Veterinary Development Schemes

Central Breeding Station, Mpwapwa.—Breeding of improved cattle strains continued but general distribution of better stock to Government farms and private individuals has not yet begun. Experimental pig and poultry farming are other activities at the station. A successful small dam was constructed in 1952. Buildings are complete except for a cool room.

Northern Province Stock Farm.—Clearing and preparation of the farm was completed and an electricity supply and an overhead irrigation system installed during 1952. Building continues.

African Veterinary Training Centre.—Recurrent expenditure on the training of Veterinary Assistants at Mpwapwa is still a charge against the Agricultural Development Reserve. The course lasts two years and each class numbers about ten.

Southern Highlands Stock Farm.—The farm is not yet fully stocked but successful stall feeding and manuring of pasture is being carried out.

Demonstration Farm, East Kilimanjaro.—A good grain crop was harvested and stored for use as livestock food. Here also the farm is not yet fully stocked as the grade of stock required is not readily obtainable.

Veterinary Centres.—Recurrent costs of ten Veterinary Centres staffed by African Veterinary Assistants for extension work will continue to be met from the Agricultural Development Reserve until the end of 1954.

Pasture Research.—This scheme which was largely financed from a Colonial Development and Welfare grant was absorbed into the Veterinary Department's normal programme at the end of 1952. During the year grazing trials continued at Mpwapwa and Tumbi with the emphasis on meat gains from pasture and fodder. A water supply was installed at the Tumbi research station.

Pilot Ranching Scheme, Mkata Plains.—Three experimental schemes are now in operation on the Mkata Plains. The original ranching scheme now has a self-contained ranch of 20,000 acres. To the end of 1952 cumulative

expenditure amounted to £29,500 which was fully covered by revenue and stock and equipment on hand. Disease incidence was very low in 1952 and nearly 2,400 head were on the ranch at the end of the year. A second ranch was opened during the year as a holding ground for immature cattle purchased in markets in areas where culling campaigns are in progress. Government has bought in these markets where no other buyer for ranching has appeared in order to prevent uneconomic slaughter and disastrous falls of price. Poor grazing and failure to find good water supplies in the chosen area caused difficulties. A successful borehole has now been sunk but it is in tsetse bush which has to be cleared. The third scheme was for the mechanical production of baled hay for sale to dairy farmers in Dar es Salaam. Buyers were keen at Shs. 2/- per bale of forty to fifty pounds but owing to roughness of ground, flooding, and later burning of grass production was not altogether satisfactory. Shortage of trucks on the railway made it possible to market only about forty-five tons.

General Local Development Schemes

Local Development Loan Fund.—Thirteen loans were made in 1952, totalling £15,750 at 2½% interest for periods of one to five years. This included a loan of £14,000 to the Rufiji Native Treasury to purchase further mechanical equipment for rice cultivation in the Rufiji basin: while the ultimate success of this scheme is still assured, a series of dry years was followed by excessive flooding in 1952 which resulted in a loss of almost the whole crop. A total of 7,500 acres has been ploughed in the latest season but credit had to be extended to farmers who lost their previous crop and repayment of instalments of the original £18,000 loan made in 1949 have had to be postponed. Other loans went to individual Africans to enable them to purchase ploughs and train oxen, to extend hand cultivation of grain and cash-crops, and vegetables and fruit, or to construct small irrigation works. No loans or interest were written off during the year.

Uluguru Land Usage Scheme.—Land terracing continued and trash bunding was introduced. Emphasis has been placed on the protection of good soil, rather than the reclamation of eroded slopes, so that the Waluguru may see tangible results. Coffee seedlings have been distributed, cloves are doing well in nurseries and plantations of wattle, cypress, cassia and eucalyptus are being extended. Resettlement in the plain areas is not progressing rapidly owing to their distance and the fact that few hillsides have yet been closed to cultivation. Mechanical ploughing continues in the plains but is doubtfully economic at cost of Shs. 70/- per acre. The Vegetable Growers' Co-operative Society prospered, marketing 627 tons during the year.

The vast area involved minimizes the very considerable achievements of the past few years: at the present rate of progress 200 years would be needed to complete the rehabilitation and development of Uluguru. The staff of the scheme have decided that emphasis must be put on propaganda and demonstration, rather than "police" action, and that a closer integration with the District Team, Native Authority and the leaders of clan, lineage and family groups is to be aimed at. The burning down of instructors' houses is thought to be a sign of a hidden hard-core of opposition to the

aims of the scheme, while the ineffectiveness of headmen in regulating the traditional and destructive hill-burning indicates a lack of co operation which must be overcome by closer understanding, training and example.

Usambara Development Scheme.—Three Field Officers arrived at the beginning of the year. With their help the ridging campaign in the hill areas was extended to one-third of all the Jumbeates: the people displayed far less reluctance to carry out this policy than in previous years. An order forbidding grazing on the steep slopes was generally accepted, but burning of grass continued although it was forbidden and it proved very difficult to close any of the steep hillsides to annual crops. In spite of stall-feeding, control of grazing and planting of fodder grasses, it is believed that a destocking programme will be needed if the problem of the Usambara Mountains is to be solved. Nearly 100,000 trees were transplanted from the Native Administration nurseries during the year. The survey and mapping of forest reserves was started and a general land usage map of the whole area was prepared. The latter revealed that, out of 1,700,000 acres in the District, owing to lack of rainfall, salinity, alienation or forest reservation, only about 200,000 were actually available for the 45,000 African households: it is thus clear that the present expansion areas (which are included in the 200,000 acres) can provide only a temporary solution to the congestion on the hills. In these expansion areas in the plains mechanical cultivation experiments continued; irrigation furrows were constructed and swamps drained. Salt-leaching experiments were made in the hope that saline soil may be brought into use for rice cultivation.

Development of Sukumaland.—The economic aspects of the complex of activities centred upon the Sukumaland Federation Headquarters at Malya is, for the present, financed from the Agricultural Development Reserve, but attention is already being directed to the gradual transfer of financial responsibility to the Native Treasuries of the area before the Reserve is exhausted in 1956.

The buildings of the Stock Farm were all but complete by the end of 1952 and the very expensive work of fencing paddocks began. Several tons of hay were made and experiments were initiated to prove the carrying capacity of different types of grazing and the worth of indigenous fodder grasses. Surveys were made for local erosion control and for the assessment of percentages of usable land, as well as to provide detailed topographical information and information on land tenure. Contour ridging and tie-ridging continue to be pressed. Rice nurseries were a success, but fish ponds were disappointing in their yields. Two thousand five hundred acres of bush were cleared in Kwimba and a tsetse survey completed in Geita District. Earth-moving equipment was employed on dam building in Geita District early in the year and towards the end of the year in Mwanza. Twenty-two dams were constructed by hand, and a successful training course for dam construction foremen was held in May. Parish Councils have been established in a quarter of the parishes and Advisory Land Councils constituted to consider closing to immigration parishes whose population exceeds the land capacity. Destocking Rules were agreed early in January and the combined effect of marketing, local slaughter and removal to development areas was a reduction of cattle population by 6·63 per cent.

Kolo Rehabilitation Scheme.—More than twenty square miles of bush in the development area at the foot of the scarp were cleared during 1952. Two successful boreholes were sunk by the Water Development Department to supply the cleared areas and a new road twenty miles in length was cut to give access to them. A wet-weather grazing reserve was demarcated by sisal planting. Contour banks in the Kolo area were re-dug or cleaned out. Voluntary culling took place in the highland area but stock population continued to increase and it is clear that the culling rate will have to be higher. The pilot scheme at Kolo merges at the beginning of 1953 into a general Irangi Development Scheme.

Development of Mbulu District.—The five-year scheme financed by a Colonial Development and Welfare Grant of £90,900 and a Native Treasury Social Services Development Plan of £36,000 came to an end in December, 1952. The planned clearing of more than 600 square miles of tsetse bush was completed; culling reduced the cattle population of overstocked areas by one-quarter to one-third and began to be acknowledged by the people as visibly beneficial; trash bunding was accepted with enthusiasm, and the campaign to encourage tree planting began to meet with support. Dams and pipelines to provide water in cleared areas have been constructed by the Water Development Department and by the field staff of the Development Scheme; of their work the impressive expanse of the artificial lake Muchlur will be an abiding record. Consolidation of the visible, and the invisible achievements of the concentrated effort of the last five years lies with the District Team, the Native Authorities and the two Field Officers for whose continued services the Native Treasury is to reimburse Government.

Masai Development Plan.—Although shortage of spares delayed the bringing into service of the mechanical earth-moving unit destined for Masai-land, the Department of Water Development was able to install one dam, one pipeline, and two borehole pumps and tanks. Construction began of the Meriti pipeline near Landenai and of the long pipeline that is to carry water from the Munge stream above the Ngorongoro crater to the grazing areas above Ol Balbal and Ndoldol. Mechanical clearing of bush proceeded rapidly. Successful hay-making experiments were carried out on the Kisongo farm.

Biharamulo Development Plan.—A well-digging team was organized and constructed seven wells. A ten million-gallon dam was built at Rongwe. In the two selected areas of Busambiro and Kalenze a large proportion of the available manpower was engaged on bush clearing. More encouraging still, the people of other areas did some bush clearing on their own initiative and constantly inquired when they could start to construct dams. During the year it was agreed that the scheme should be extended to cover Ngara as well as Biharamulo District.

Development of Natural Resources, Southern Province.—Highlights of the development of the Southern Province, with its new railway and its new port at Mtwara, are the O.F.C. farming venture at Nachingwea, the C.D.C. mineral investigations, Steel Bros. timber production, alienated tobacco estates in Tunduru and Songea Districts and cashew nut production on the coast. The object of the development scheme is to raise the

productivity of the African inhabitants to keep pace with all this alien development by helping the natural resources departments to fill in gaps in their normal services. Two of the main activities are the development of a livestock industry by reclamation of tsetse bush and the import of cattle, and improvements of beeswax production by instruction and advice.

Colonial Insecticide Research

Aerial spraying and tsetse fly counts continued in the experimental areas in Kondoa, Mbulu and Masailand, and in a new area in the centre of the Overseas Food Corporation clearings at Urambo. A variety of experiments and investigations into control of tsetse, mosquitoes and crop pests were carried out by the staff of the Research Unit based on Arusha.

Forestry

A Colonial Development and Welfare Grant of £140,000 has been used during the years 1947-52 to finance a proportion of the recurrent expenditure of the Forestry Department. The Scheme expired at the end of 1952 during which it contributed £38,650 to a total expenditure of £157,000.

Geological Survey

Personal emoluments and administrative expenses of a proportion of the staff of the Geological Survey Department were met from Colonial Development and Welfare funds under a five-year scheme which was due to expire at the end of 1952. As there was delay in earlier years in filling these appointments a balance of about £20,000 remained unspent and an extension of the scheme into 1953 has been sought. Final payments were made during 1952 for the office and laboratory buildings constructed at Dodoma. The two-year scheme under the auspices of the Economic Co-operation Administration came to an end in June 1952 : the two Geologists had carried out investigations in the Karagwe tinfields and on various graphite deposits in the early months of the year.

Mineral Development

Salt Investigations.—Field work was carried out in the Bahi Depression and the Lake Natron area. Solar evaporation ponds were experimented with in the Bahi—Kigwe area. Salt samples collected throughout the territory were given laboratory tests.

Drilling Investigations.—Exploratory drills in connection with water supplies were sunk in Masailand and Dodoma. Later in the year investigations were begun of a copper prospect in Mpwapwa District.

Coal Investigations.—Maps and bulletins on the Kitewaka-Mchuchuma and Mhukuru Coalfields were prepared : the field work is now in the hands of the Colonial Development Corporation.

Development of Rural Water Supplies

Dam building was restricted to three dams, of 441 acre-feet in all, by the need to recondition plant. Eleven pumped supplies with a total yield of 233,000 gallons a day were installed, the outstanding scheme being that at Newala where water is pumped in three stages up the steep scarp face

through a total lift of 1,200 feet. The provision of water at kiosks in the village has saved the immense labour of carrying it up by hand and made possible the diversion of effort to useful agricultural pursuits which can strengthen the economy of the area. Surveys were carried out for the extension of similar supplies throughout the Makonde Plateau, a scheme whose first stage is expected to cost some £120,000. Six gravity supplies were completed, yielding in all 10,341,000 gallons a day. Twelve boreholes were sunk, mainly in the Central Province, for domestic and cattle-watering supplies.

Roads

Great North Road.—A considerable length of road in the Central Province was reformed and gravelled and a number of drifts eliminated or improved. Steel bridges were ordered through the Crown Agents.

Namanga-Arusha-Moshi-Himo Road.—This bituminized road is now open to traffic for the whole distance between Namanga and Arusha and for the greater part of the Arusha-Himo section. Work is in progress on the link going south to the Korogwe road.

Tanga-Korogwe Road.—Construction began early in 1952 and is proceeding satisfactorily.

Dar es Salaam-Morogoro Road.—A revision during the year of the estimate of cost of this road disclosed that unless standards of design were reduced over part of its length funds would not be available to complete it. The Consulting Engineers, Sir Alexander Gibb & Partners, have withdrawn from responsibility for the Ruvu-Morogoro section, which will be constructed with gravel surface by Messrs. Stirling-Astaldi Ltd., in terms of a new contract and under the general supervision of the Director of Public Works. Work on the Dar es Salaam-Ruvu section is being carried out by the same firm and is far advanced.

Morogoro-Iringa Road.—Two P.W.D. construction units are at work, one based at Mzumbe, the other at Mikumi. Some fifty miles of clearing and fifteen of road formation were completed. From Mikumi south a route has been surveyed through the Iovi Valley which will save some fifteen miles in distance and over 1,000 feet of climbing.

Dar es Salaam-Bagamoyo Road.—In view of the heavy traffic over this part of the road it was decided to construct an eighteen feet wide bitumen surface as far as Kunduchi. Two-thirds of the work had been done by the end of the year.

Lindi-Nanganga Road.—A P.W.D. Construction unit was at work on this road throughout the year.

Ambangulu Circuit Road.—Improvements were carried out by the District Commissioner, Korogwe with the advice of the Public Works Department.

Surveys.—Surveys were completed for the following roads :—

Mindu-Lumesule Juu,
Mtwara-Masasi,
Jumbe Salim-Ngwina,
Ngwina-Songea,
Songea-Njombe,
Rufiji River crossing,
Arusha-Loljoro,
Mara River crossing,
Buturi-Utege,
Utege-Mara Mine.

Surveys are in progress for the following :—

Mtwara-Rufiji River,	Morogoro-Kongwa,
Ifakara-Mgeta,	Geita-Biharamulo.

Township Roads.—The programme of bituminizing and improving the most used roads in the townships of Tanganyika continued, work being carried out by the Township Authority where its works capacity was adequate and elsewhere by the Public Works Department. In Dar es Salaam a considerable share of the work, including gravel roads in new high-density housing areas, was carried out by the Municipality, but the Public Works Department undertook road works in the Kinondoni and Changombe housing estates.

Minor Roads.—A total of £90,000 was provided for road improvements and the construction of new roads in development areas. Noteworthy examples of these are the South Pare Road, the Mpanda-Sumbawanga Road, the Olmolog Farms Road, and roads in the Southern Province.

Aerodromes

Dar es Salaam.—The contract for the runways of the new aerodrome was delayed by breakdown and overhaul of plant : completion is now expected by December 1953. Designs for the terminal building were prepared by the Public Works Department, and construction of some of the ancillary buildings begun.

Mtwara.—The main runway came into use in July.

Tanga.—The terminal building was completed early in the year and the new runway in July. Necessary additional drainage is now being provided.

Other Aerodromes.—Terminal buildings and improved runways were completed at Mbeya, Moshi, Mafia and Kigoma. A new terminal building and a runway extension were begun at Arusha. Oldeani landing strip is now in use. A survey has been made for an aerodrome at Tunduru.

Medical Buildings

Kibongoto Tuberculosis Hospital.—Work of the value of £14,000, representing about one-third of the total cost and virtually completing the building, was carried out in 1952.

Kolandoto Leprosarium.—A water supply was installed by the Water Development Department during 1952.

Mweka Nurses' Training Centre.—This Training Centre is complete except for the electrical generating plant which is being installed.

Student Nurses' Hostel, Tanga.—The hostel was completed during 1952.

New Hospital, Dar es Salaam.—Layout details have been prepared by the architectural staff engaged on this work throughout the year. The Consulting Architect visited Dar es Salaam and made specific proposals designed to keep the cost of the project within the available funds.

Maternity Wing, European Hospital, Dar es Salaam.—The building is complete but awaits the installation of certain equipment not yet delivered from the United Kingdom.

Extensions to Mental Hospital, Dodoma.—Plans were prepared for future extensive additions and one twenty-seven-bed ward was constructed during 1952.

Other Hospitals.—Korogwe Hospital and three wards of Nzega Hospital were practically complete by the end of the year. Work began on Lindi Hospital and a site was allocated for the new hospital at Ngara. Minor extensions and replacements were carried out at Biharamulo.

Education Buildings

Teachers' Training Centres, Mpwapwa and Butimba.—Good progress is being made, at Mpwapwa by the Education Department and at Butimba by the Public Works Department. Butimba is now substantially complete.

Senior Secondary Schools, Tabora.—Extensions to the Boys' School and the Girls' School continued during 1952. Office and store accommodation was provided at the former and six new dormitories and a laboratory at the latter.

Secondary School, Songea.—A Senior Service quarter and a laboratory were built during 1952, by the Public Works Department, but under the supervision of the Technical Instructor of the Education Department.

Primary Schools.—Work has begun on schools at Mbeya and Dodoma each of which will cost rather more than £6,000.

Other Education Buildings.—The foundation stone of the Pare Girls' School was laid late in the year. Building continued at the Trade School, Ifunda. A site for the second trade school near Moshi was accepted from the Native Authority.

Social Development

The Arnautoglu Community centre in Dar es Salaam was completed and opened in 1952. Further equipment for the Broadcasting Station was delivered. The literacy campaign in Pare District continued and began to take on some of the aspects of a general development scheme. Other Rural Social Development funds were used to improve social amenities or finance small adult literacy campaigns in many districts. The Sociological Research Officer who has been living among the Barabaig for the last two years completed his field work: the successful arrest by the Native Authority of a group of Barabaig cattle thieves who killed a Msandawe in a neighbouring district is the first-fruit of the new understanding between Government and the tribe which his work has brought about.

Township Water Supplies and Drainage

Dar es Salaam.—Installation of electrically driven raw-water pumps, filtration plant, main booster pumps and electricity generating plant at the new Waterworks is well in hand. The underdrainage of Yomboni Creek, which forms a pilot scheme for an economic extension of the supply, was completed towards the end of 1952 and promises a satisfactory yield. The leading distribution mains in the Pugu Road area, including Ukonga and the new Airport, and to Oyster Bay and the new Barracks at Observation Hill, were laid. Work on the third leading main from Mtoni along Kilwa Road to supply the town is proceeding.

Laying of sewers in the commercial area has continued and construction of the screening plant and main sea outfall has begun. Tenders were called for the first section of the surface water drainage scheme in the commercial area.

Mtwara.—High lift pumps were installed and made possible a full supply of water. As yields from temporary boreholes are proving satisfactory, permanent boreholes are to be sunk. The new 152,000-gallon service reservoir is awaiting shipment from the United Kingdom.

Other Townships.—New water supplies at Lushoto, Shinyanga, Tukuyu and Songea came into use during 1952. A new gravity main was laid from Mongo springs to supply Lindi. The first of six boreholes to augment Tanga's water supply was nearly completed and an elevated service reservoir erected. At Iringa work began on sedimentation tanks, the filter house and the eight-inch steel rising main. Delivery of plant and equipment ordered for Iringa in 1951 was begun. A new supply for Kilwa Masoko is being installed and surveys for improved supplies have been carried out by the Public Works Department at Morogoro, Kimamba, Singida, Mpwapwa, Korogwe and Ujiji. The consulting engineers, Messrs. Howard Humphrey & Sons, have submitted preliminary suggestions for improvements to the Tabora water supply and are now preparing detailed recommendations.

Other Public Buildings and Works

Workshops and Depots.—The programme of construction is nearing completion. P.W.D. Depots at Morogoro, Tabora, Mtwara, Kilosa and Tanga and a Motor Transport Depot in Dar es Salaam were finished during 1952. Work continues at Mwanza, Bukoba and Kilwa and on the Heavy Plant Workshops at Morogoro.

Government Stores.—Tanga Stores are in operation, but some constructional work remains to be done. At Mtwara building of the Southern Province subsidiary Stores began during 1952 and continues.

Medical Stores.—The new buildings, with the exception of the Pharmaceutical Laboratory, are now in use. Delivery of certain equipment alone delays completion.

Senior Service Housing.—One hundred and twenty-five quarters begun in 1951 were completed, and 135 new units of accommodation were begun during 1952. The latter figure includes 36 flats and 20 hostel rooms at Kinondoni (Dar es Salaam). All this housing was completed or nearing completion at the end of the year.

Junior Service Housing, Grade I.—Approximately 100 quarters begun in 1951 were completed, and 72 new quarters, including blocks of terraced two-storey houses at Arusha, were begun, during 1952.

Junior Service Housing, Grade II.—Ninety-six quarters were begun during 1952.

Office Accommodation.—Work finished during 1952 on the Agriculture and Natural Resources Offices at Singida, the District Office at Kilosa and the Court-house at Moshi. The District Office at Ngara is not yet complete while that at Kibondo was postponed until 1953.

Grain Storage.—The main depots throughout the territory are now all substantially finished with the exception of the storage sheds at Tanga, which remain for 1953.

Government Press.—The new buildings in Dar es Salaam are complete and machinery is being installed.

K.A.R. Barracks.—Construction continued throughout 1952 of quarters, administrative block, stores, the water storage tank and the rifle range. The total estimated cost of these new barracks on Observation Hill, close to Dar es Salaam, is £352,000.

African Urban Housing.—The urgency of the need for cheap housing, to relieve overcrowding and soaring rents, became more evident. Government's policy of deflation rules out alike subsidies and wage increases. Progress therefore depends on lowering costs. Experimental building in local materials—stabilised earth blocks and roman tiles—was carried out in Dar es Salaam by the Public Works Department, side by side with the construction of 144 houses in hollow brick and Mangalore-type tiles by a contractor. The experimental building proved that costs are not significantly reduced merely by the use of such local materials as are available and that in future reduced standards of accommodation must be accepted if housing is to be provided at rents which working-class people can pay. This principle was applied, though not yet radically, to designs for a group of 50 houses at Tanga on which work began later in the year. At Arusha the estate of 100 houses begun in 1951 continued to grow, some 70 of the houses being complete at the end of 1952. Forty houses were built at Morogoro, 20 at Iringa, 20 at Mtwara, 12 at Dodoma and 10 at Kilosa.

APPENDIX II

THE DEVELOPMENT BUDGET: STATEMENT OF EXPENDITURE

Details of Expenditure	Total Expenditure to 31.12.49	Actual Expenditure 1950	Actual Expenditure 1951	Actual Expenditure 1952	Total Expenditure to 31.12.52	Estimate 1953
	£	£	£	£	£	£
Section I.—Conservation and Development of Natural Resources:						
Agriculture and Animal Husbandry ...	562,761	359,117	396,324	455,343	1,773,545	523,034
Forestry	23,824	22,724	32,299	38,650	117,497	—
Development of Water Supplies	446,341	168,417	123,230	208,619	946,607	211,000
Soil Conservation	23,813	36,838	28,231	104	88,986	—
Survey	5,884	—	—	—	5,884	—
Geological Survey and Mineral Development	35,369	39,137	51,856	49,437	175,799	—
Total Section I ...	1,097,992	626,233	631,940	752,153	3,108,318	734,034
Section II.—Communications:						
Roads	293,289	1,093,819	1,237,429	1,879,743	4,504,280	1,779,000
Improvements to Aerodromes	76,164	13,895	153,244	350,552	574,155	340,000
Telecommunications	243,315	—	—	—	243,315	—
Total Section II ...	613,068	1,107,714	1,390,673	2,210,295	5,321,750	2,119,000
Section III.—Social Services:						
Public Health	7,807	38,963	49,691	106,004	202,465	223,200
Education	440,094	291,965	108,683	211,105	1,051,847	110,000
Social Centres	25,776	1,502	5,351	40,429	73,058	5,000
Social Development	—	3,644	20,051	29,171	52,866	32,897
Total Section III ...	473,677	366,074	183,776	386,709	1,380,236	371,097
Section IV.—Miscellaneous:						
Township Development	113,938	449,714	511,727	367,519	1,472,898	418,000
Public Buildings and Works	612,784	905,772	1,100,886	1,212,814	3,832,256	583,053
Land Acquisition and Settlement ...	128,189	—	—	—	128,189	—
Miscellaneous Services	56,374	12,651	11,047	59,820	139,892	50,000
Total Section IV ...	941,285	1,368,137	1,623,660	1,640,153	5,573,235	1,051,053
TOTAL ...	3,126,022	3,438,158	3,830,049	4,989,310	15,383,539	4,275,184

NOTES: (i) 1953 Estimate for Agriculture and Animal Husbandry represents expenditure under Part II of the Budget.

(ii) Other 1953 Estimate figures represent expenditure under Part III of the Budget.

(iii) All services transferred to Part I of the 1953 Budget are excluded.